



SEQUENCE LISTING

<110> PEETERS, PIETER JOHAN

GOHLMANN, HINRICH WILHELM HELMUT

SWAGEMAKERS, SIGRID MARIA ALICE

FIERENS, FREDERIK LUCIEN PETER

<120> GENES WHOSE EXPRESSION IS INCREASED IN RESPONSE TO
STIMULATION BY CORTICOTROPIN-RELEASING HORMONE

<130> PRD-2008-USPCT1

<140> 10/532,740

<141> 2005-04-26

<150> PCT/EP03/011793

<151> 2003-10-23

<150> PCT/EP02/12273

<151> 2002-10-31

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<170> PatentIn Ver. 3.3

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 Pro Leu Pro Pro Ser Glu Glu Thr Ala Glu Pro Glu Ala Arg Leu Val
 1010 1015 1020

 Glu Val Thr Glu Ser Ser Asn Gln Asp Ala Leu Ser Gly Ser Ser Asp
 1025 1030 1035 1040

 Leu Leu Glu Leu Leu Gln Glu Asp Ser Arg Ser Gly Thr Gly Ser
 1045 1050 1055

 Ala Ala Ser Gly Ser Leu Gly Ser Gly Leu Gly Ser Gly Ser Gly Ser
 1060 1065 1070

 Gly Ser His Glu Gly Gly Ser Thr Ser Ala Ser Ile Thr Arg Ser Ser
 1075 1080 1085

 Gln Ser Ser His Thr Ser Lys Tyr Phe Gly Ser Ile Asp Ser Ser Glu
 1090 1095 1100

 Ala Glu Ala Gly Ala Ala Arg Ala Arg Thr Glu Pro Gly Asp Gln Val
 1105 1110 1115 1120

 Ile Lys Cys Val Leu Gln Asp Pro Ile Trp Leu Leu Met Ala Asn Ala
 1125 1130 1135

 Asp Gln Arg Val Met Met Thr Tyr Gln Val Pro Ser Arg Asp Ala Ala
 1140 1145 1150

 Ser Val Leu Lys Gln Asp Arg Glu Arg Leu Arg Ala Met Gln Lys Gln
 1155 1160 1165

 Gln Pro Arg Phe Ser Glu Asp Gln Arg Arg Glu Leu Gly Ala Val His
 1170 1175 1180

Ser Trp Val Arg Lys Gly Gln Leu Pro Arg Ala Leu Asp Val Met Ala
1185 1190 1195 1200

Cys Val Asp Cys Gly Ser Ser Val Gln Asp Pro Gly His Ser Asp Asp
1205 1210 1215

Pro Leu Phe Ser Glu Leu Asp Gly Leu Gly Leu Glu Pro Met Glu Glu
1220 1225 1230

Gly Gly Gly Glu Gly Gly Cys Gly Val Gly Gly Gly Gly Gly Asp
1235 1240 1245

Gly Gly Glu Glu Ala Gln Thr Gln Ile Gly Ala Lys Gly Ser Ser Ser
1250 1255 1260

Gln Asp Ser Ala Met Glu Glu Glu Glu Gln Gly Gly Gly Ser Ser Ser
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Pro Ala Leu Pro Ala Glu Glu Asn Ser Thr Ser
1285 1290

<210> 7
<211> 1897
<212> DNA
<213> *Mus musculus*

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atagtatcat tacagtttc tgtaagagaa aatattactt atttatccca gtattcctag 1860
 cctgtcaaca taataaatat cggaacaaaa cctggta 1897

<210> 8
 <211> 181
 <212> PRT
 <213> Mus musculus

<400> 8
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Thr Ala Ile Val Pro Cys Leu Ser Pro Pro Gly Ser Leu Val Phe Glu
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Asp Phe Ala Asn Leu Thr Pro Phe Val Lys Glu Glu Leu Arg Phe Ala
 35 40 45

Ile Gln Asn Lys His Leu Cys His Arg Met Ser Ser Ala Leu Glu Ser
 50 55 60

Val Thr Val Asn Asn Arg Pro Leu Glu Met Ser Val Thr Lys Ser Glu
 65 70 75 80

Ala Ala Pro Glu Glu Asp Glu Arg Lys Arg Arg Arg Arg Glu Arg Asn
 85 90 95

Lys Ile Ala Ala Ala Lys Cys Arg Asn Lys Lys Lys Glu Lys Thr Glu
 100 105 110

Cys Leu Gln Lys Glu Ser Glu Lys Leu Glu Ser Val Asn Ala Glu Leu
 115 120 125

Lys Ala Gln Ile Glu Glu Leu Lys Asn Glu Lys Gln His Leu Ile Tyr
 130 135 140

Met Leu Asn Leu His Arg Pro Thr Cys Ile Val Arg Ala Gln Asn Gly
 145 150 155 160

Arg Thr Pro Glu Asp Glu Arg Asn Leu Phe Ile Gln Gln Ile Lys Glu
 165 170 175

Gly Thr Leu Gln Ser
 180

<210> 9
 <211> 1038
 <212> DNA
 <213> Mus musculus

<400> 9
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aacaatgtga	tgaagatagc	agactttggc	ctggccaggg	atatacaca	catagactac	540
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<210> 10
<211> 345
<212> PRT
<213> *Mus musculus*

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 Lys Glu Ala Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr
 35 40 45

 Glu Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met
 50 55 60

 Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln
 65 70 75 80

 Asp Gly Pro Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu
 85 90 95

 Arg Glu Tyr Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr
 100 105 110

 Asp Ile Asn Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val
 115 120 125

 Ser Cys Thr Tyr Gln Leu Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln
 130 135 140

 Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu
 145 150 155 160

 Asn Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn
 165 170 175

 Asn Ile Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys
 180 185 190

Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser
 195 200 205
 Asp Val Trp Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly
 210 215 220
 Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu
 225 230 235 240
 Lys Glu Gly His Arg Met Asp Lys Pro Thr Asn Cys Thr Asn Glu Leu
 245 250 255
 Tyr Met Met Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro
 260 265 270
 Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr
 275 280 285
 Thr Asn Glu Glu Tyr Leu Asp Leu Thr Gln Pro Leu Glu Gln Tyr Ser
 290 295 300
 Pro Ser Tyr Pro Asp Thr Ser Ser Ser Cys Ser Ser Gly Asp Asp Ser
 305 310 315 320
 Val Phe Ser Pro Asp Pro Met Pro Tyr Glu Pro Cys Leu Pro Gln Tyr
 325 330 335
 Pro His Ile Asn Gly Ser Val Lys Thr
 340 345

<210> 11
 <211> 2429
 <212> DNA
 <213> Mus musculus

<400> 11
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 ttcacttctt gaaaatgtatc ggaaaggca gtttgaaa ggttctctg gctaggcaca 420
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<210> 12
 <211> 431
 <212> PRT
 <213> Mus musculus

<400> 12			
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Met Gly Leu Asn Asp Phe Ile Gln Lys Ile Ala Ser Asn Thr Tyr Ala			
35	40		45
Cys Lys His Ala Glu Val Gln Ser Ile Leu Lys Met Ser His Pro Gln			
50	55		60
Glu Pro Glu Leu Met Asn Ala Asn Pro Ser Pro Pro Pro Ser Pro Ser			
65	70	75	80
Gln Gln Ile Asn Leu Gly Pro Ser Ser Asn Pro His Ala Lys Pro Ser			
85	90		95
Asp Phe His Phe Leu Lys Val Ile Gly Lys Gly Ser Phe Gly Lys Val			
100	105		110
Leu Leu Ala Arg His Lys Ala Glu Glu Val Phe Tyr Ala Val Lys Val			
115	120		125
Leu Gln Lys Lys Ala Ile Leu Lys Lys Lys Glu Glu Lys His Ile Met			
130	135		140
Ser Glu Arg Asn Val Leu Leu Lys Asn Val Lys His Pro Phe Leu Val			
145	150	155	160

Gly Leu His Phe Ser Phe Gln Thr Ala Asp Lys Leu Tyr Phe Val Leu
 165 170 175

 Asp Tyr Ile Asn Gly Gly Glu Leu Phe Tyr His Leu Gln Arg Glu Arg
 180 185 190

 Cys Phe Leu Glu Pro Arg Ala Arg Phe Tyr Ala Ala Glu Ile Ala Ser
 195 200 205

 Ala Leu Gly Tyr Leu His Ser Leu Asn Ile Val Tyr Arg Asp Leu Lys
 210 215 220

 Pro Glu Asn Ile Leu Leu Asp Ser Gln Gly His Ile Val Leu Thr Asp
 225 230 235 240

 Phe Gly Leu Cys Lys Glu Asn Ile Glu His Asn Gly Thr Thr Ser Thr
 245 250 255

 Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val Leu His Lys Gln
 260 265 270

 Pro Tyr Asp Arg Thr Val Asp Trp Trp Cys Leu Gly Ala Val Leu Tyr
 275 280 285

 Glu Met Leu Tyr Gly Leu Pro Pro Phe Tyr Ser Arg Asn Thr Ala Glu
 290 295 300

 Met Tyr Asp Asn Ile Leu Asn Lys Pro Leu Gln Leu Lys Pro Asn Ile
 305 310 315 320

 Thr Asn Ser Ala Arg His Leu Leu Glu Gly Leu Leu Gln Lys Asp Arg
 325 330 335

 Thr Lys Arg Leu Gly Ala Lys Asp Asp Phe Met Glu Ile Lys Ser His
 340 345 350

 Ile Phe Phe Ser Leu Ile Asn Trp Asp Asp Leu Ile Asn Lys Lys Ile
 355 360 365

 Thr Pro Pro Phe Asn Pro Asn Val Ser Gly Pro Ser Asp Leu Arg His
 370 375 380

 Phe Asp Pro Glu Phe Thr Glu Glu Pro Val Pro Ser Ser Ile Gly Arg
 385 390 395 400

 Ser Pro Asp Ser Ile Leu Val Thr Ala Ser Val Lys Glu Ala Ala Glu
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 Ala Phe Leu Gly Phe Ser Tyr Ala Pro Pro Val Asp Ser Phe Leu
 420 425 430

<210> 13
 <211> 2447
 <212> DNA
 <213> Mus musculus

<400> 13

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<210> 14

<211> 326

<212> PRT

<213> Mus musculus

<400> 14

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						20		25				30			

Lys	Glu	Ser	Phe	Glu	Lys	Val	Tyr	Gln	Val	Gly	Ala	Val	Leu	Gly	Ser
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Gly Gly Phe Gly Thr Val Tyr Ala Gly Ser Arg Ile Ala Asp Gly Leu
 50 55 60

Pro Val Ala Val Lys His Val Val Lys Glu Arg Val Thr Glu Trp Gly
 65 70 75 80

Ser Leu Gly Gly Val Ala Val Pro Leu Glu Val Val Leu Leu Arg Lys
 85 90 95

Val Gly Ala Ala Gly Gly Ala Arg Gly Val Ile Arg Leu Leu Asp Trp
 100 105 110

Phe Glu Arg Pro Asp Gly Phe Leu Leu Val Leu Glu Arg Pro Glu Pro
 115 120 125

Ala Gln Asp Leu Phe Asp Phe Ile Thr Glu Arg Gly Ala Leu Asp Glu
 130 135 140

Pro Leu Ala Arg Arg Phe Phe Ala Gln Val Leu Ala Ala Val Arg His
 145 150 155 160

Cys His Asn Cys Gly Val Val His Arg Asp Ile Lys Asp Glu Asn Leu
 165 170 175

Leu Val Asp Leu Arg Ser Gly Glu Leu Lys Leu Ile Asp Phe Gly Ser
 180 185 190

Gly Ala Val Leu Lys Asp Thr Val Tyr Thr Asp Phe Asp Gly Thr Arg
 195 200 205

Val Tyr Ser Pro Pro Glu Trp Ile Arg Tyr His Arg Tyr His Gly Arg
 210 215 220

Ser Ala Thr Val Trp Ser Leu Gly Val Leu Leu Tyr Asp Met Val Cys
 225 230 235 240

Gly Asp Ile Pro Phe Glu Gln Asp Glu Glu Ile Leu Arg Gly Arg Leu
 245 250 255

Phe Phe Arg Arg Arg Val Ser Pro Glu Cys Gln Gln Leu Ile Glu Trp
 260 265 270

Cys Leu Ser Leu Arg Pro Ser Glu Arg Pro Ser Leu Asp Gln Ile Ala
 275 280 285

Ala His Pro Trp Met Leu Gly Thr Glu Gly Ser Val Pro Glu Asn Cys
 290 295 300

Asp Leu Arg Leu Cys Ala Leu Asp Thr Asp Asp Gly Ala Ser Thr Thr
 305 310 315 320

Ser Ser Ser Glu Ser Leu
 325

<210> 15
 <211> 2299
 <212> DNA
 <213> Mus musculus

<400> 15
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 gatgctgatc taatcggtgc aaaaagttag tccgaccgct ggtttcaag acatgtggtg 180
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<210> 16
 <211> 534
 <212> PRT
 <213> Mus musculus

<400> 16
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Asp Pro Thr Pro Gln His Tyr Pro Ser Phe Gly Val Thr Ser Ile Pro
 35 40 45

 Asn Tyr Asn Asn Phe His Ala Ala Gly Gly Gln Gly Leu Thr Val Phe
 50 55 60

 Gly Gly Val Asn Ser Ser His Thr Gly Thr Leu Arg Thr Arg Gly
 65 70 75 80

 Gly Thr Gly Val Thr Leu Phe Val Ala Leu Tyr Asp Tyr Glu Ala Arg
 85 90 95

 Thr Glu Asp Asp Leu Ser Phe His Lys Gly Glu Lys Phe Gln Ile Leu
 100 105 110

 Asn Ser Ser Glu Gly Asp Trp Trp Glu Ala Arg Ser Leu Thr Thr Gly
 115 120 125

 Glu Thr Gly Tyr Ile Pro Ser Asn Tyr Val Ala Pro Val Asp Ser Ile
 130 135 140

 Gln Ala Glu Glu Trp Tyr Phe Gly Lys Leu Gly Arg Lys Asp Ala Glu
 145 150 155 160

 Arg Gln Leu Leu Ser Phe Gly Asn Pro Arg Gly Thr Phe Leu Ile Arg
 165 170 175

 Glu Ser Gln Thr Thr Lys Gly Ala Tyr Ser Leu Ser Ile Arg Asp Trp
 180 185 190

 Asp Asp Met Lys Gly Asp His Val Lys His Tyr Lys Ile Arg Lys Leu
 195 200 205

 Asp Asn Gly Gly Tyr Tyr Ile Thr Thr Arg Ala Gln Phe Glu Thr Leu
 210 215 220

 Gln Gln Leu Val Gln His Tyr Ser Glu Lys Ala Asp Gly Leu Cys Phe
 225 230 235 240

 Asn Leu Thr Val Val Ser Ser Ser Cys Thr Pro Gln Thr Ser Gly Leu
 245 250 255

 Ala Lys Asp Ala Trp Glu Val Ala Arg Asp Ser Leu Phe Leu Glu Lys
 260 265 270

 Lys Leu Gly Gln Gly Cys Phe Ala Glu Val Trp Leu Gly Thr Trp Asn
 275 280 285

 Gly Asn Thr Lys Val Ala Ile Lys Thr Leu Lys Pro Gly Thr Met Ser
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 Pro Glu Ser Phe Leu Glu Glu Ala Gln Ile Met Lys Lys Leu Lys His
 305 310 315 320

 Asp Lys Leu Val Gln Leu Tyr Ala Val Val Ser Glu Glu Pro Ile Tyr
 325 330 335

Ile Val Thr Glu Tyr Met Ser Lys Gly Ser Leu Leu Asp Phe Leu Lys
 340 345 350

Asp Gly Glu Gly Arg Ala Leu Lys Leu Pro Asn Leu Val Asp Met Ala
 355 360 365

Ala Gln Val Ala Ala Gly Met Ala Tyr Ile Glu Arg Met Asn Tyr Ile
 370 375 380

His Arg Asp Leu Arg Ser Ala Asn Ile Leu Val Gly Asn Gly Leu Ile
 385 390 395 400

Cys Lys Ile Ala Asp Phe Gly Leu Ala Arg Leu Ile Glu Asp Asn Glu
 405 410 415

Tyr Thr Ala Arg Gln Gly Ala Lys Phe Pro Ile Lys Trp Thr Ala Pro
 420 425 430

Glu Ala Ala Leu Tyr Gly Arg Phe Thr Ile Lys Ser Asp Val Trp Ser
 435 440 445

Phe Gly Ile Leu Leu Thr Glu Leu Val Thr Lys Gly Arg Val Pro Tyr
 450 455 460

Pro Gly Met Asn Asn Arg Glu Val Leu Glu Gln Val Glu Arg Gly Tyr
 465 470 475 480

Arg Met Pro Cys Pro Gln Asp Cys Pro Ile Ser Leu His Glu Leu Met
 485 490 495

Ile His Cys Trp Lys Lys Asp Pro Glu Glu Arg Pro Thr Phe Glu Tyr
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Leu Gln Gly Phe Leu Glu Asp Tyr Phe Thr Ala Thr Glu Pro Gln Tyr
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Gln Pro Gly Glu Asn Leu
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<210> 17
<211> 2804
<212> DNA
<213> Mus musculus

<400> 17

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 aataaaagagt atgacataga aaaaaaaaaa aaaaaaaaaa aaaa 2804

<210> 18
<211> 682
<212> PRT
<213> Mus musculus

<400> 18
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Lys Arg Pro Gln Gln Pro Ser Glu Asp Gly Gln Pro Gln Ala Gln Val
35 40 45
Thr Pro Ala Ala Pro His His His His His Ser His Ser Gly Pro
50 55 60
Glu Ile Ser Arg Ile Ile Val Asp Pro Thr Thr Gly Lys Arg Tyr Cys
65 70 75 80

Arg Gly Lys Val Leu Gly Lys Gly Gly Phe Ala Lys Cys Tyr Glu Met
 85 90 95
 Thr Asp Leu Thr Asn Asn Lys Val Tyr Ala Ala Lys Ile Ile Pro His
 100 105 110
 Ser Arg Val Ala Lys Pro His Gln Arg Glu Lys Ile Asp Lys Glu Ile
 115 120 125
 Glu Leu His Arg Leu Leu His His Lys His Val Val Gln Phe Tyr His
 130 135 140
 Tyr Phe Glu Asp Lys Glu Asn Ile Tyr Ile Leu Leu Glu Tyr Cys Ser
 145 150 155 160
 Arg Arg Ser Met Ala His Ile Leu Lys Ala Arg Lys Val Leu Thr Glu
 165 170 175
 Pro Glu Val Arg Tyr Tyr Leu Arg Gln Ile Val Ser Gly Leu Lys Tyr
 180 185 190
 Leu His Glu Gln Glu Ile Leu His Arg Asp Leu Lys Leu Gly Asn Phe
 195 200 205
 Ile Ile Asn Glu Ala Met Glu Leu Lys Val Gly Asp Phe Gly Leu Ala
 210 215 220
 Ala Arg Leu Glu Pro Leu Glu His Arg Arg Arg Thr Ile Cys Gly Thr
 225 230 235 240
 Pro Asn Tyr Leu Ser Pro Glu Val Leu Asn Lys Gln Gly His Gly Cys
 245 250 255
 Glu Ser Asp Ile Trp Ala Leu Gly Cys Val Met Tyr Thr Met Leu Leu
 260 265 270
 Gly Arg Pro Pro Phe Glu Thr Thr Asn Leu Lys Glu Thr Tyr Arg Cys
 275 280 285
 Ile Arg Glu Ala Arg Tyr Thr Met Pro Ser Ser Leu Leu Ala Pro Ala
 290 295 300
 Lys His Leu Ile Ala Ser Met Leu Ser Lys Asn Pro Glu Asp Arg Pro
 305 310 315 320
 Ser Leu Asp Asp Ile Ile Arg His Asp Phe Phe Leu Gln Gly Phe Thr
 325 330 335
 Pro Asp Arg Leu Ser Ser Cys Cys His Thr Val Pro Asp Phe His
 340 345 350
 Leu Ser Ser Pro Ala Lys Asn Phe Phe Lys Lys Ala Ala Ala Leu
 355 360 365
 Phe Gly Gly Lys Lys Asp Lys Ala Arg Tyr Asn Asp Thr His Asn Lys
 370 375 380

Val Ser Lys Glu Asp Glu Asp Ile Tyr Lys Leu Arg His Asp Leu Lys
 385 390 395 400
 Lys Val Ser Ile Thr Gln Gln Pro Ser Lys His Arg Ala Asp Glu Glu
 405 410 415
 Pro Gln Pro Pro Pro Thr Thr Val Ala Arg Ser Gly Thr Ser Ala Val
 420 425 430
 Glu Asn Lys Gln Gln Ile Gly Asp Ala Ile Arg Met Ile Val Arg Gly
 435 440 445
 Thr Leu Gly Ser Cys Ser Ser Ser Glu Cys Leu Glu Asp Ser Thr
 450 455 460
 Met Gly Ser Val Ala Asp Thr Val Ala Arg Val Leu Arg Gly Cys Leu
 465 470 475 480
 Glu Asn Met Pro Glu Ala Asp Cys Ile Pro Lys Glu Gln Leu Ser Thr
 485 490 495
 Ser Phe Gln Trp Val Thr Lys Trp Val Asp Tyr Ser Asn Lys Tyr Gly
 500 505 510
 Phe Gly Tyr Gln Leu Ser Asp His Thr Val Gly Val Leu Phe Asn Asn
 515 520 525
 Gly Ala His Met Ser Leu Leu Pro Asp Lys Lys Thr Val His Tyr Tyr
 530 535 540
 Ala Glu Leu Gly Gln Cys Ser Val Phe Pro Ala Thr Asp Ala Pro Glu
 545 550 555 560
 Gln Phe Ile Ser Gln Val Thr Val Leu Lys Tyr Phe Ser His Tyr Met
 565 570 575
 Glu Glu Asn Leu Met Asp Gly Gly Asp Leu Pro Ser Val Thr Asp Ile
 580 585 590
 Arg Arg Pro Arg Leu Tyr Leu Leu Gln Trp Leu Lys Ser Asp Lys Ala
 595 600 605
 Leu Met Met Leu Phe Asn Asp Gly Thr Phe Gln Val Asn Phe Tyr His
 610 615 620
 Asp His Thr Lys Ile Ile Cys Asn Gln Ser Glu Glu Tyr Leu Leu
 625 630 635 640
 Thr Tyr Ile Asn Glu Asp Arg Ile Ser Thr Thr Phe Arg Leu Thr Thr
 645 650 655
 Leu Leu Met Ser Gly Cys Ser Leu Glu Leu Lys Asn Arg Met Glu Tyr
 660 665 670
 Ala Leu Asn Met Leu Leu Gln Arg Cys Asn
 675 680

<210> 19
<211> 658
<212> DNA
<213> Mus musculus

<400> 19
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cctggcgcag ccggtagtcc ctgcagaagc tacggacccc gtggagcagc gggcgcaaga 180
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cgttcttaag aacctgcaga gcctggaccc cagccataga ataagtgacc gggactacat 360
gggctggatg gatttggcc ggcgcagtgc cgaggactac gaatacccat cgttagtgggc 420
cagcgtcttgc gcctgtctt gaggaggatgg aatgaggaaa caaccacaca tacgacccct 480
cgccttaat gtcgtacgtt ttgagtatct atttataag tccccatgt gaaatctgtc 540
cagagtgtgc aatgcagcca catctcagcc tagctgtgtg gtcgaaaggc agtgtttcc 600
tcagtgactc ccagacctaa tgttgtatg ctattaaaga gatttccttc tgcccccc 658

<210> 20
<211> 115
<212> PRT
<213> Mus musculus

<400> 20
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20 25 30
Glu Gln Arg Ala Gln Glu Ala Pro Arg Arg Gln Leu Arg Ala Val Leu
35 40 45
Arg Thr Asp Gly Glu Pro Arg Ala Arg Leu Gly Ala Leu Leu Ala Arg
50 55 60
Tyr Ile Gln Gln Val Arg Lys Ala Pro Ser Gly Arg Met Ser Val Leu
65 70 75 80
Lys Asn Leu Gln Ser Leu Asp Pro Ser His Arg Ile Ser Asp Arg Asp
85 90 95
Tyr Met Gly Trp Met Asp Phe Gly Arg Arg Ser Ala Glu Asp Tyr Glu
100 105 110
Tyr Pro Ser
115

<210> 21
<211> 1381
<212> DNA
<213> Mus musculus

<400> 21
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cttcaagtgc ttgacaacgc acccccttat cagggtatca gagcatgcc acagaatgaa 180
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 g
 1381

<210> 22
 <211> 184
 <212> PRT
 <213> Mus musculus

<400> 22
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 Leu Gly Ala Asp Thr Ala Gly Pro Asp Thr Pro Ser Gln Phe Arg Lys
 20 25 30

 Lys Trp Asn Lys Trp Ala Leu Ser Arg Gly Lys Arg Glu Leu Gln Ala
 35 40 45

 Ser Ser Ser Tyr Pro Thr Gly Leu Ala Asp Glu Thr Thr Val Pro Thr
 50 55 60

 Gln Thr Leu Asp Pro Phe Leu Asp Glu Gln Asn Thr Thr Gly Pro Leu
 65 70 75 80

 Gln Ala Ser Asn Gln Ser Glu Ala His Ile Arg Val Lys Arg Tyr Arg
 85 90 95

 Gln Ser Met Asn Gln Gly Ser Arg Ser Asn Gly Cys Arg Phe Gly Thr
 100 105 110

 Cys Thr Phe Gln Lys Leu Ala His Gln Ile Tyr Gln Leu Thr Asp Lys
 115 120 125

 Asp Lys Asp Gly Met Ala Pro Arg Asn Lys Ile Ser Pro Gln Gly Tyr
 130 135 140

Gly Arg Arg Arg Arg Ser Leu Leu Glu Val Leu Arg Ser Arg Thr
 145 150 155 160
 Val Glu Ser Ser Gln Glu Gln Thr His Thr Ala Pro Gly Pro Trp Ala
 165 170 175
 His Ile Ser Arg Leu Phe Arg Ile
 180

<210> 23
<211> 850
<212> DNA
<213> Mus musculus

<400> 23
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aaaaaaaaaa 850

<210> 24
<211> 136
<212> PRT
<213> Mus musculus

<400> 24
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Glu Ser Ser Pro Gly Met Ala Thr Leu Ser Glu Glu Val Arg Leu
 35 40 45
Leu Ala Ala Leu Val Gln Asp Tyr Met Gln Met Lys Ala Arg Glu Leu
 50 55 60
Glu Gln Glu Glu Gln Glu Ala Glu Gly Ser Ser Leu Asp Ser Pro
 65 70 75 80
Arg Ser Lys Arg Cys Gly Asn Leu Ser Thr Cys Met Leu Gly Thr Tyr
 85 90 95

Thr Gln Asp Leu Asn Lys Phe His Thr Phe Pro Gln Thr Ser Ile Gly
 100 105 110

Val Glu Ala Pro Gly Lys Lys Arg Asp Val Ala Lys Asp Leu Glu Thr
 115 120 125

Asn His Gln Ser His Phe Gly Asn
 130 135

<210> 25
<211> 2912
<212> DNA
<213> Mus musculus

<400> 25
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Lys Ser Ile Arg Gln Arg Arg Arg Phe Thr Val Ala His Thr Cys Phe
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Asp Val Glu Asn Gly Pro Ser Pro Gly Arg Ser Pro Leu Asp Pro Gln
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Ala Gly Ser Ser Ser Gly Leu Val Leu His Ala Ala Phe Pro Gly His
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Ser Gln Arg Arg Glu Ser Phe Leu Tyr Asp Leu Asp Ser Asp Tyr Asp
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His Gly Asp Asp Leu Ile Val Thr Pro Phe Ala Gln Val Leu Ala Ser
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Leu Arg Ser Val Arg Asn Asn Phe Thr Leu Leu Thr Asn Leu His Gly
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Ala Pro Asn Lys Arg Ser Pro Ala Ala Ser Gln Ala Pro Val Ser Arg
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Val Ser Leu Gln Glu Glu Ser Tyr Gln Lys Leu Ala Met Glu Thr Leu
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Glu Glu Leu Asp Trp Cys Leu Asp Gln Leu Glu Thr Ile Gln Thr Tyr
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Arg Ser Val Ser Glu Met Ala Ser Asn Lys Phe Lys Arg Met Leu Asn
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Arg Glu Leu Thr His Leu Ser Glu Met Ser Arg Ser Gly Asn Gln Val
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Ser Glu Tyr Ile Ser Asn Thr Phe Leu Asp Lys Gln Asn Asp Val Glu
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Ile Phe Asn Val Ala Gly Tyr Ser His Asn Arg Pro Leu Thr Cys Ile
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Met Tyr Ala Ile Phe Gln Glu Arg Asp Leu Leu Lys Thr Phe Lys Ile
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His Ser Asp Val Ala Tyr His Asn Ser Leu His Ala Ala Asp Val Ala
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Gln Ser Thr His Val Leu Leu Ser Thr Pro Ala Leu Asp Ala Val Phe
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Thr Asp Leu Glu Ile Leu Ala Ala Ile Phe Ala Ala Ala Ile His Asp
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Val Asp His Pro Gly Val Ser Asn Gln Phe Leu Ile Asn Thr Asn Ser
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Glu Leu Ala Leu Met Tyr Asn Asp Glu Ser Val Leu Glu Asn His His
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 <212> DNA
 <213> Mus musculus

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 <213> Mus musculus

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 35 40 45

Leu Gln Asn Ser Ser Ala Pro Gly Lys Pro Lys Thr Gly Lys Lys Ser
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Lys Gln Gln Thr Phe Ile Lys Pro Ser Pro Glu Glu Ala His Val Trp
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Ser Ser Lys Ala Arg Lys Ile Tyr Thr Asp Phe Ile Glu Lys Glu Ala
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Pro Lys Glu Ile Asn Ile Asp Phe Gln Thr Lys Ser Leu Ile Ala Gln
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Asn Ile Gln Glu Ala Thr Ser Gly Cys Phe Thr Thr Ala Gln Lys Arg
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Val Pro Thr Leu Ala Gln Val Ala Thr Ile Ala Glu Thr Asp Asp Ser
 35 40 45

Ala Asp Ser Glu Val Ile Asp Ser His Lys Arg Arg Glu Ile Leu Ser
 50 55 60

Arg Arg Pro Ser Tyr Arg Lys Ile Leu Asn Glu Leu Ser Ser Asp Val
 65 70 75 80

Pro Gly Ile Pro Lys Ile Glu Glu Glu Lys Ser Glu Glu Glu Gly Thr
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Pro Pro Asn Ile Ala Thr Met Ala Val Pro Thr Ser Ile Tyr Gln Thr
 100 105 110

Ser Thr Gly Gln Tyr Asn Glu Glu Thr Asp Leu Ala Pro Ser His Met
 115 120 125

Ala Ala Ala Thr Gly Asp Met Pro Thr Tyr Gln Ile Arg Ala Pro Thr
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Thr Ala Leu Pro Gln Gly Val Val Met Ala Ala Ser Pro Gly Ser Leu
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His Ser Pro Gln Gln Leu Ala Glu Glu Ala Thr Arg Lys Arg Glu Leu
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Arg Leu Met Lys Asn Arg Glu Ala Ala Arg Glu Cys Arg Arg Lys Lys
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Lys Glu Tyr Val Lys Cys Leu Glu Asn Arg Val Ala Val Leu Glu Asn
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Gln Asn Lys Thr Leu Ile Glu Glu Leu Lys Ala Leu Lys Asp Leu Tyr
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<210> 31
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 <212> DNA
 <213> Mus musculus

<400> 31

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Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
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Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
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3454

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<213> Mus musculus

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35 40 45
Arg Pro Glu Asp Ile Gly Trp Leu Asn Gly Tyr Asn Glu Thr Thr Gly
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Glu Arg Gly Asp Phe Pro Gly Thr Tyr Val Glu Tyr Ile Gly Arg Lys
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Arg Ile Ser Pro Pro Thr Pro Lys Pro Arg Pro Pro Arg Pro Leu Pro
85 90 95
Val Ala Pro Gly Ser Ser Lys Thr Glu Ala Asp Thr Glu Gln Gln Ala
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Leu Pro Leu Pro Asp Leu Ala Glu Gln Phe Ala Pro Pro Asp Val Ala
115 120 125
Pro Pro Leu Leu Ile Lys Leu Leu Glu Ala Ile Glu Lys Lys Gly Leu
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Glu Cys Ser Thr Leu Tyr Arg Thr Gln Ser Ser Asn Pro Ala Glu
145 150 155 160
Leu Arg Gln Leu Leu Asp Cys Asp Ala Ala Ser Val Asp Leu Glu Met
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Ile Asp Val His Val Leu Ala Asp Ala Phe Lys Arg Tyr Leu Ala Asp
180 185 190
Leu Pro Asn Pro Val Ile Pro Val Ala Val Tyr Asn Glu Met Met Ser
195 200 205
Leu Ala Gln Glu Leu Gln Ser Pro Glu Asp Cys Ile Gln Leu Leu Lys
210 215 220
Lys Leu Ile Arg Leu Pro Asn Ile Pro His Gln Cys Trp Leu Thr Leu
225 230 235 240
Gln Tyr Leu Leu Lys His Phe Phe Lys Leu Ser Gln Ala Ser Ser Lys
245 250 255

Asn Leu Leu Asn Ala Arg Val Leu Ser Glu Ile Phe Ser Pro Val Leu
 260 265 270
 Phe Arg Phe Pro Ala Ala Ser Ser Asp Asn Thr Glu His Leu Ile Lys
 275 280 285
 Ala Ile Glu Ile Leu Ile Ser Thr Glu Trp Asn Glu Arg Gln Pro Ala
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 Pro Ala Leu Pro Pro Lys Pro Pro Lys Pro Thr Thr Val Ala Asn Asn
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 325 330 335
 Asp Ile Ser Arg Glu Glu Val Asn Glu Lys Leu Arg Asp Thr Ala Asp
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 Gly Thr Phe Leu Val Arg Asp Ala Ser Lys Met His Gly Asp Tyr Thr
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 370 375 380
 Arg Asp Gly Lys Tyr Gly Phe Ser Asp Pro Leu Thr Phe Asn Ser Val
 385 390 395 400
 Val Glu Leu Ile Asn His Tyr Arg Asn Glu Ser Leu Ala Gln Tyr Asn
 405 410 415
 Pro Lys Leu Asp Val Lys Leu Leu Tyr Pro Val Ser Lys Tyr Gln Gln
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 Asp Gln Val Val Lys Glu Asp Asn Ile Glu Ala Val Gly Lys Lys Leu
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 Cys Gln Thr Gln Glu Arg Tyr Ser Lys Glu Tyr Ile Glu Lys Phe Lys
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 515 520 525
 Lys Leu Lys Ser Arg Ile Ser Glu Ile Ile Asp Ser Arg Arg Arg Leu
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 Glu Glu Asp Leu Lys Lys Gln Ala Ala Glu Tyr Arg Glu Ile Asp Lys
 545 550 555 560

Arg Met Asn Ser Ile Lys Pro Asp Leu Ile Gln Leu Arg Lys Thr Arg
 565 570 575

Asp Gln Tyr Leu Met Trp Leu Thr Gln Lys Gly Val Arg Gln Lys Lys
 580 585 590

Leu Asn Glu Trp Leu Gly Asn Glu Asn Thr Glu Asp Gln Tyr Ser Leu
 595 600 605

Val Glu Asp Asp Glu Asp Leu Pro His His Asp Glu Lys Thr Trp Asn
 610 615 620

Val Gly Ser Ser Asn Arg Asn Lys Ala Glu Asn Leu Leu Arg Gly Lys
 625 630 635 640

Arg Asp Gly Thr Phe Leu Val Arg Glu Ser Ser Lys Gln Gly Cys Tyr
 645 650 655

Ala Cys Ser Val Val Val Asp Gly Glu Val Lys His Cys Val Ile Asn
 660 665 670

Lys Thr Ala Thr Gly Tyr Gly Phe Ala Glu Pro Tyr Asn Leu Tyr Ser
 675 680 685

Ser Leu Lys Glu Leu Val Leu His Tyr Gln His Thr Ser Leu Val Gln
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His Asn Asp Ser Leu Asn Val Thr Leu Ala Tyr Pro Val Tyr Ala Gln
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Gln Arg Arg

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<211> 3446
<212> DNA
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 gaataaaagtt agtgttgc 3446

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 <212> PRT
 <213> Mus musculus

<400> 36
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Gly Gly Cys Ser Ala Ile Ser Ala His Gly Cys Leu Phe Asp Arg Arg
 35 40 45

Leu Cys Ser His Leu Glu Val Cys Ile Gln Asp Gly Leu Phe Gly Gln
 50 55 60

Cys Gln Ala Gly Val Gly Gln Ala Arg Pro Leu Leu Gln Val Thr Ser
 65 70 75 80

Pro Val Leu Gln Arg Leu Gln Gly Val Leu Arg Gln Leu Met Ser Gln
 85 90 95

Gly Leu Ser Trp His Asp Asp Leu Thr Gln His Val Ile Ser Gln Glu
 100 105 110

Met Glu Arg Ile Pro Arg Leu Arg Pro Pro Glu Pro His Pro Arg Asp
 115 120 125

Arg Ser Gly Leu Val Pro Arg Lys Pro Gly Pro Ala Gly Glu Leu Leu
 130 135 140

Thr Gln Gly Asn Pro Thr Gly Ser Ser Pro Ala Ala Gln Gly Phe Pro
 145 150 155 160

Arg Pro Ala Gly Gly Arg Ser Trp Gly Gly Ser Pro Leu Ser Ser Leu
 165 170 175

Gln Ala Glu Leu Leu Pro Pro Leu Leu Glu His Leu Leu Met Pro Pro
 180 185 190

Gln Pro Pro His Pro Ala Leu Thr Tyr Glu Pro Ala Leu Leu Gln Pro
 195 200 205

Tyr Leu Phe His Gln Phe Gly Ser Arg Asp Gly Ser Arg Gly Ser Glu
 210 215 220

Ser Ser Ser Gly Val Val Gly Val Gly His Leu Ser Lys Ala Glu Gly
 225 230 235 240

Pro Ala Leu Phe Ser Arg Ser Ala Ser Lys Ala Ile Leu Gly Thr His
 245 250 255

Ser Gly His Ser Phe Gly Asp Leu Thr Gly Pro Ser Pro Ala Gln Leu
 260 265 270

Phe Gln Asp Ser Gly Leu Leu Tyr Met Ala Gln Glu Leu Pro Val Pro
 275 280 285

Gly Arg Ala Arg Ala Pro Arg Leu Pro Glu Asn Gly Gly Asn Arg Ala
 290 295 300

Glu Asp Ser Ser Glu Gly His Glu Glu Glu Val Leu Gly Gly Arg Gly
 305 310 315 320

Glu Lys Ser Pro Pro Gln Ala Ala Gln Pro Glu Leu Ser Leu Gln Arg
 325 330 335

Leu Thr Ala Val Leu Ala Gly Tyr Gly Val Glu Leu Arg Gln Leu Thr
 340 345 350

Pro Glu Gln Phe Ser Thr Leu Leu Thr Leu Met Gln Leu Leu Pro Lys
 355 360 365

 Gly Thr Gly Arg Asn Leu Glu Gly Ala Val Asn Val Gly Gly Ala Asp
 370 375 380

 Val Lys Lys Thr Ile Gln Gln Met Gln Arg Gly Asp Pro Ala Glu Ala
 385 390 395 400

 Leu Pro Pro Thr Pro Ser Leu Pro Gly Tyr Leu Thr Ala Ser Pro Ala
 405 410 415

 Ser Ser Glu Val Gln Gln Val Leu Ser Pro Gly Phe Pro Glu Pro Pro
 420 425 430

 His Thr Pro Ser Pro Leu Gly Ser Ser Ser Val Leu Leu Glu Lys Lys
 435 440 445

 Ser Pro Leu Gly Gln Ser Gln Pro Thr Val Val Gly Arg Pro Ser Ala
 450 455 460

 Arg Pro Ser Ala Glu Glu Tyr Gly Tyr Ile Val Thr Asp Gln Lys Pro
 465 470 475 480

 Leu Ser Leu Val Ala Gly Val Arg Leu Leu Glu Ile Leu Ala Glu His
 485 490 495

 Val His Met Ser Ser Gly Ser Phe Ile Asn Ile Ser Val Val Gly Pro
 500 505 510

 Ala Val Thr Phe Arg Ile Arg His Asn Glu Gln Asn Leu Ser Leu Ala
 515 520 525

 Asp Val Thr Gln Gln Ala Gly Leu Val Lys Ser Glu Leu Glu Ala Gln
 530 535 540

 Thr Gly Leu Gln Ile Leu Gln Thr Gly Val Gly Gln Arg Glu Glu Ala
 545 550 555 560

 Ala Glu Val Leu Pro Arg Gln Ala His Gly Ile Ser Pro Met Arg Ser
 565 570 575

 Val Leu Leu Thr Leu Val Ala Leu Ala Gly Val Ala Gly Leu Leu Val
 580 585 590

 Ala Leu Ala Val Ala Leu Cys Met Arg His His Ser Arg Gln Arg Asp
 595 600 605

 Lys Glu Arg Leu Ala Ala Leu Gly Pro Glu Gly Ala His Gly Asp Thr
 610 615 620

 Thr Phe Glu Tyr Gln Asp Leu Cys Arg Gln His Met Ala Thr Lys Ser
 625 630 635 640

 Leu Phe Asn Arg Ala Glu Gly Gln Pro Glu Pro Ser Arg Val Ser Ser
 645 650 655

Val Ser Ser Gln Phe Ser Asp Ala Ala Gln Ala Ser Pro Ser Ser His
 660 665 670
 Ser Ser Ser Pro Ser Trp Cys Glu Glu Pro Ala Gln Ala Asn Met Asp
 675 680 685
 Ile Ser Thr Gly His Met Ile Leu Ala Tyr Met Glu Asp His Leu Arg
 690 695 700
 Asn Arg Asp Arg Leu Ala Lys Glu Trp Gln Ala Leu Cys Ala Tyr Gln
 705 710 715 720
 Ala Glu Pro Asn Thr Cys Ala Ala Ala Gln Asp Glu Ser Asn Ile Lys
 725 730 735
 Lys Asn Arg His Pro Asp Phe Leu Pro Tyr Asp His Ala Arg Ile Lys
 740 745 750
 Leu Lys Val Glu Ser Ser Pro Ser Arg Ser Asp Tyr Ile Asn Ala Ser
 755 760 765
 Pro Ile Ile Glu His Asp Pro Arg Met Pro Ala Tyr Ile Ala Thr Gln
 770 775 780
 Gly Pro Leu Ser His Thr Ile Ala Asp Phe Trp Gln Met Val Trp Glu
 785 790 795 800
 Ser Gly Cys Thr Val Ile Val Met Leu Thr Pro Leu Val Glu Asp Gly
 805 810 815
 Val Lys Gln Cys Asp Arg Tyr Trp Pro Asp Glu Gly Ser Ser Leu Tyr
 820 825 830
 His Val Tyr Glu Val Asn Leu Val Ser Glu His Ile Trp Cys Glu Asp
 835 840 845
 Phe Leu Val Arg Ser Phe Tyr Leu Asn Leu Gln Thr Gln Glu Thr Arg
 850 855 860
 Thr Leu Thr Gln Phe His Phe Leu Ser Trp Pro Ala Glu Gly Thr Pro
 865 870 875 880
 Ala Ser Thr Arg Pro Leu Leu Asp Phe Arg Arg Lys Val Asn Lys Cys
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 Tyr Arg Gly Arg Ser Cys Pro Ile Ile Val His Cys Ser Asp Gly Ala
 900 905 910
 Gly Arg Thr Gly Thr Tyr Ile Leu Ile Asp Met Val Leu Asn Arg Met
 915 920 925
 Ala Lys Gly Val Lys Glu Ile Asp Ile Ala Ala Thr Leu Glu His Val
 930 935 940
 Arg Asp Gln Arg Pro Gly Leu Val Arg Ser Lys Asp Gln Phe Glu Phe
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Pro Gln

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<211> 1933
<212> DNA
<213> *Mus musculus*

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<211> 367
<212> PRT
<213> *Mus musculus*

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 35 40 45

 Ser Thr Ile Val Arg Arg Ala Lys Gly Ala Met Gly Leu Glu His
 50 55 60

 Ile Val Pro Asn Ala Glu Leu Arg Gly Arg Leu Leu Ala Gly Ala Tyr
 65 70 75 80

 His Ala Val Val Leu Leu Asp Glu Arg Ser Ala Ser Leu Asp Gly Ala
 85 90 95

 Lys Arg Asp Gly Thr Leu Ala Leu Ala Gly Ala Leu Cys Arg Glu
 100 105 110

 Ala Arg Ser Thr Gln Val Phe Phe Leu Gln Gly Gly Tyr Glu Ala Phe
 115 120 125

 Ser Ala Ser Cys Pro Glu Leu Cys Ser Lys Gln Ser Thr Pro Thr Gly
 130 135 140

 Leu Ser Leu Pro Leu Ser Thr Ser Val Pro Asp Ser Ala Glu Ser Gly
 145 150 155 160

 Cys Ser Ser Cys Ser Thr Pro Leu Tyr Asp Gln Gly Gly Pro Val Glu
 165 170 175

 Ile Leu Ser Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ser Arg Lys
 180 185 190

 Asp Met Leu Asp Ala Leu Gly Ile Thr Ala Leu Ile Asn Val Ser Ala
 195 200 205

 Asn Cys Pro Asn His Phe Glu Gly His Tyr Gln Tyr Lys Ser Ile Pro
 210 215 220

 Val Glu Asp Asn His Lys Ala Asp Ile Ser Ser Trp Phe Asn Glu Ala
 225 230 235 240

 Ile Asp Phe Ile Asp Ser Ile Lys Asp Ala Gly Gly Arg Val Phe Val
 245 250 255

 His Cys Gln Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr
 260 265 270

 Leu Met Arg Thr Asn Arg Val Lys Leu Asp Glu Ala Phe Glu Phe Val
 275 280 285

 Lys Gln Arg Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln
 290 295 300

 Leu Leu Gln Phe Glu Ser Gln Val Leu Ala Pro His Cys Ser Ala Glu
 305 310 315 320

Ala Gly Ser Pro Ala Met Ala Val Leu Asp Arg Gly Thr Ser Thr Thr
325 330 335

Thr Val Phe Asn Phe Pro Val Ser Ile Pro Val His Pro Thr Asn Ser
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Ala Leu Asn Tyr Leu Lys Ser Pro Ile Thr Thr Ser Pro Ser Cys
355 360 365

<210> 39
<211> 1981
<212> DNA
<213> *Mus musculus*

<400> 39

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<210> 40
<211> 295
<212> PRT
<213> Mus musculus

<400> 40
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Pro Gln Gln Arg Trp Ser Met Pro Ala Asp Ala Arg His Leu Met Val
 20 25 30

Gln Lys Asp Pro His Pro Cys Asn Leu Arg Asn Arg His Ser Thr Ala
 35 40 45

Pro Glu Glu His Cys Arg Arg Thr Trp Ser Ser Asp Ser Thr Asp Ser
 50 55 60

Val Ile Ser Ser Glu Ser Gly Asn Thr Tyr Tyr Arg Val Val Leu Ile
 65 70 75 80

Gly Glu Gln Gly Val Gly Lys Ser Thr Leu Ala Asn Ile Phe Ala Gly
 85 90 95

Val His Asp Ser Met Asp Ser Asp Cys Glu Val Leu Gly Glu Asp Thr
 100 105 110

Tyr Glu Arg Thr Leu Val Val Asp Gly Glu Ser Ala Thr Ile Ile Leu
 115 120 125

Leu Asp Met Trp Glu Asn Lys Gly Glu Asn Glu Trp Leu His Asp His
 130 135 140

Cys Met Gln Val Gly Asp Ala Tyr Leu Ile Val Tyr Ser Ile Thr Asp
 145 150 155 160

Arg Ala Ser Phe Glu Lys Ala Ser Glu Leu Arg Ile Gln Leu Arg Arg
 165 170 175

Ala Arg Gln Thr Glu Asp Ile Pro Ile Ile Leu Val Gly Asn Lys Ser
 180 185 190

Asp Leu Val Arg Cys Arg Glu Val Ser Val Ser Glu Gly Arg Ala Cys
 195 200 205

Ala Val Val Phe Asp Cys Lys Phe Ile Glu Thr Ser Ala Ala Val Gln
 210 215 220

His Asn Val Lys Glu Leu Phe Glu Gly Ile Glu Arg Gln Val Arg Leu
 225 230 235 240

Pro Arg Asp Ser Lys Glu Lys Asn Glu Arg Arg Leu Ala Tyr Gln Lys
 245 250 255

Arg Arg Glu Ser Ile Pro Arg Lys Ala Arg Arg Phe Trp Gly Lys Ile
 260 265 270

Val Ala Lys Asn Asn Lys Asn Met Ala Ser Ser Ser Lys Ser Lys Ser
 275 280 285

Cys His Asp Leu Ser Val Leu
 290 295

<210> 41
<211> 1242
<212> DNA
<213> Mus musculus

<400> 41
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gcaacagac agggatgctg gagaggctgc ctgcgtgtgg gaaaggcttc gctgacatga 180
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<210> 42
<211> 147
<212> PRT
<213> Mus musculus

<400> 42
Met Lys Thr Pro Ala Gln Arg Leu His Leu Leu Pro Leu Leu Leu Leu
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Leu Cys Gly Glu Cys Ala Gln Val Cys Gly Cys Asn Glu Thr Gly Met
20 25 30
Leu Glu Arg Leu Pro Arg Cys Gly Lys Ala Phe Ala Asp Met Met Gln
35 40 45
Lys Val Ala Val Trp Lys Trp Cys Asn Leu Ser Glu Phe Ile Val Tyr
50 55 60
Tyr Glu Ser Phe Thr Asn Cys Thr Glu Met Glu Thr Asn Ile Met Gly
65 70 75 80
Cys Tyr Trp Pro Asn Pro Leu Ala Gln Ser Phe Ile Thr Gly Ile His
85 90 95
Arg Gln Phe Phe Ser Asn Cys Thr Val Asp Arg Thr His Trp Glu Asp
100 105 110

Pro Pro Asp Glu Val Leu Ile Pro Leu Ile Ala Val Pro Val Val Leu
 115 120 125

Thr Val Ala Met Ala Gly Leu Val Val Trp Arg Ser Lys His Thr Asp
 130 135 140

Arg Leu Leu
 145

<210> 43
 <211> 1115
 <212> DNA
 <213> Mus musculus

<400> 43
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 gattactgcc tccagaggct gtacatgcgg gacctcgGCC acaccAGCAG CGCTCACACG 180
 gccctcatgg aagagtttgc aaaactaatac cagaccatat ggacgtcgTC ccccaatgat 240
 gtggtagGCC catctgagtt caagACCCAG ATCCAGAGAT atgcGCCACG CTTCATGGGC 300
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 gtgaACCggg tggcagcaag gcctaaggCC agCCCTGAGA ccCTTGATCA tCTCCCTGAT 420
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 gtgacgttaa tggattgtat gaggctctc accaaagagg acatattgga tggtgatgag 660
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 ttcaatgatt ccagtgtcac acccatgtcc tccagccaag tgCGCACCAG CGACGCCTAT 1020
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 ctccccctt ccctgtgggt gccccacgTC ctaag 1115

<210> 44
 <211> 353
 <212> PRT
 <213> Mus musculus

<400> 44
 Met Leu Asn Lys Ala Lys Asn Ser Lys Ser Ala Gln Gly Leu Ala Gly
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Leu Arg Asn Leu Gly Asn Thr Cys Phe Met Asn Ser Ile Leu Gln Cys
 20 25 30

Leu Ser Asn Thr Arg Glu Leu Arg Asp Tyr Cys Leu Gln Arg Leu Tyr
 35 40 45

Met Arg Asp Leu Gly His Thr Ser Ser Ala His Thr Ala Leu Met Glu
 50 55 60

Glu Phe Ala Lys Leu Ile Gln Thr Ile Trp Thr Ser Ser Pro Asn Asp
 65 70 75 80

<210> 45
<211> 3034
<212> DNA
<213> Mus musculus

<400> 45

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gcccgtggcc agccggacg gacatgcgcg ggagggcgcc gcggggtccc gtccttgg 180
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cagagtgggg cacaatgtca acagcaggag ttgtctgtca ggatattcga gtcccatcaa 300
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tatattactt atttatgaaa aaaaaaaaaaaaaaaa 3000
3034

<210> 46
 <211> 461
 <212> PRT
 <213> Mus musculus

<400> 46
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Thr Gly Phe Leu His Asn Gly Gln Ala Leu Gly Asn Met Lys Ser Cys
 20 25 30

Trp Gly Ser His Ser Glu Phe Glu Asn Asn Phe Leu Asn Ile Asp Pro
 35 40 45

Ile Thr Met Ala Tyr Asn Leu Asn Ser Pro Ala Gln Glu His Leu Thr
 50 55 60

Thr Val Gly Cys Ala Ala Arg Ser Ala Pro Gly Ser Gly His Phe Phe
 65 70 75 80

Ala Glu Cys Gly Pro Ser Pro Arg Ser Ser Leu Pro Pro Leu Val Ile
 85 90 95

Ser Pro Ser Glu Ser Ser Gly Gln Arg Glu Glu Asp Gln Val Met Cys
 100 105 110

Gly Phe Lys Lys Leu Ser Val Asn Gly Val Cys Thr Ser Thr Pro Pro
 115 120 125

Leu Thr Pro Ile Lys Ser Cys Pro Ser Pro Phe Pro Cys Ala Ala Leu
 130 135 140

Cys Asp Arg Gly Ser Arg Pro Leu Pro Pro Leu Pro Ile Ser Glu Asp
 145 150 155 160

Leu Cys Val Asp Glu Ala Asp Ser Glu Val Glu Leu Leu Thr Thr Ser
 165 170 175

Ser Asp Thr Asp Leu Leu Glu Asp Ser Ala Pro Ser Asp Phe Lys
 180 185 190

Tyr Asp Ala Pro Gly Arg Arg Ser Phe Arg Gly Cys Gly Gln Ile Asn
 195 200 205

Tyr Ala Tyr Phe Asp Ser Pro Thr Val Ser Val Ala Asp Leu Ser Cys
 210 215 220

Ala Ser Asp Gln Asn Arg Val Val Pro Asp Pro Asn Pro Pro Pro Pro
 225 230 235 240

Gln Ser His Arg Arg Leu Arg Arg Ser His Ser Gly Pro Ala Gly Ser
 245 250 255

Phe Asn Lys Pro Ala Ile Arg Ile Ser Ser Cys Thr His Arg Ala Ser
 260 265 270

Pro Ser Ser Asp Glu Asp Lys Pro Glu Val Pro Pro Arg Val Pro Ile
 275 280 285
 Pro Pro Arg Pro Ala Lys Pro Asp Tyr Arg Arg Trp Ser Ala Glu Val
 290 295 300
 Thr Ser Asn Thr Tyr Ser Asp Glu Asp Arg Pro Pro Lys Val Pro Pro
 305 310 315 320
 Arg Glu Pro Leu Ser Arg Ser Asn Ser Arg Thr Pro Ser Pro Lys Ser
 325 330 335
 Leu Pro Ser Tyr Leu Asn Gly Val Met Pro Pro Thr Gln Ser Phe Ala
 340 345 350
 Pro Asp Pro Lys Tyr Val Ser Ser Lys Ala Leu Gln Arg Gln Ser Ser
 355 360 365
 Glu Gly Ser Ala Asn Lys Val Pro Cys Ile Leu Pro Ile Ile Glu Asn
 370 375 380
 Gly Lys Lys Val Ser Ser Thr His Tyr Tyr Leu Leu Pro Glu Arg Pro
 385 390 395 400
 Pro Tyr Leu Asp Lys Tyr Glu Lys Tyr Phe Lys Glu Ala Glu Glu Thr
 405 410 415
 Asn Pro Ser Thr Gln Ile Gln Pro Leu Pro Ala Ala Cys Gly Met Ala
 420 425 430
 Ser Ala Thr Glu Lys Leu Ala Ser Arg Met Lys Ile Asp Met Gly Ser
 435 440 445
 His Gly Lys Arg Lys His Leu Ser Tyr Val Val Ser Pro
 450 455 460

<210> 47
 <211> 2328
 <212> DNA
 <213> Mus musculus

<400> 47
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 aaaaccatgc accgatacac gctggagatg ttcagaacat gccagtttg cccacagtcc 180
 cgagagatca tccacaaaagc acttattgac agaagtgtcc aggctccct ggaaagccag 240
 aagaagctca actggtgtcg tgaagtccagg aagctcggtt ctctgaaaac caatggtgat 300
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 aacatcctca gaagacccat cattgtcatt ttagacaaaa tgctaagaag ttggaaatct 660
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<210> 48
 <211> 775
 <212> PRT
 <213> Mus musculus

<400> 48			
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Thr Asn Gly Ile Ile Tyr His Phe Lys Thr Met His Arg Tyr Thr Leu			
35	40	45	
Glu Met Phe Arg Thr Cys Gln Phe Cys Pro Gln Phe Arg Glu Ile Ile			
50	55	60	
His Lys Ala Leu Ile Asp Arg Ser Val Gln Ala Ser Leu Glu Ser Gln			
65	70	75	80
Lys Lys Leu Asn Trp Cys Arg Glu Val Arg Lys Leu Val Ala Leu Lys			
85	90	95	
Thr Asn Gly Asp Gly Asn Cys Leu Met His Ala Ala Cys Gln Tyr Met			
100	105	110	
Trp Gly Val Gln Asp Thr Asp Leu Val Leu Arg Lys Ala Leu Cys Ser			
115	120	125	
Thr Leu Lys Glu Thr Asp Thr Arg Asn Phe Lys Phe Arg Trp Gln Leu			
130	135	140	

Glu Ser Leu Lys Ser Gln Glu Phe Val Glu Thr Gly Leu Cys Tyr Asp
 145 150 155 160

Thr Arg Asn Trp Asn Asp Glu Trp Asp Asn Leu Val Lys Met Ala Ser
 165 170 175

Ala Asp Thr Pro Ala Ala Arg Ser Gly Leu Gln Tyr Asn Ser Leu Glu
 180 185 190

Glu Ile His Ile Phe Val Leu Ser Asn Ile Leu Arg Arg Pro Ile Ile
 195 200 205

Val Ile Ser Asp Lys Met Leu Arg Ser Leu Glu Ser Gly Ser Asn Phe
 210 215 220

Ala Pro Leu Lys Val Gly Gly Ile Tyr Leu Pro Leu His Trp Pro Ala
 225 230 235 240

Gln Glu Cys Tyr Arg Tyr Pro Ile Val Leu Gly Tyr Asp Ser Gln His
 245 250 255

Phe Val Pro Leu Val Thr Leu Lys Asp Ser Gly Pro Glu Leu Arg Ala
 260 265 270

Val Pro Leu Val Asn Arg Asp Arg Gly Arg Phe Glu Asp Leu Lys Val
 275 280 285

His Phe Leu Thr Asp Pro Glu Asn Glu Met Lys Glu Lys Leu Leu Lys
 290 295 300

Glu Tyr Leu Ile Val Met Glu Ile Pro Val Gln Gly Trp Asp His Gly
 305 310 315 320

Thr Thr His Leu Ile Asn Ala Ala Lys Leu Asp Glu Ala Asn Leu Pro
 325 330 335

Lys Glu Ile Asn Leu Val Asp Asp Tyr Phe Glu Leu Val Gln His Glu
 340 345 350

Tyr Lys Lys Trp Gln Glu Asn Ser Asp Gln Ala Arg Arg Ala Ala His
 355 360 365

Ala Gln Asn Pro Leu Glu Pro Ser Thr Pro Gln Leu Ser Leu Met Asp
 370 375 380

Ile Lys Cys Glu Thr Pro Asn Cys Pro Phe Phe Met Ser Val Asn Thr
 385 390 395 400

Gln Pro Leu Cys His Glu Cys Ser Glu Arg Arg Gln Lys Asn Gln Ser
 405 410 415

Lys Leu Pro Lys Leu Asn Ser Lys Leu Gly Pro Glu Gly Leu Pro Gly
 420 425 430

Val Gly Leu Gly Ser Ser Asn Trp Ser Pro Glu Glu Thr Ala Gly Gly
 435 440 445

Pro His Ser Ala Pro Pro Thr Ala Pro Ser Leu Phe Leu Phe Ser Glu
 450 455 460

Thr Thr Ala Met Lys Cys Arg Ser Pro Gly Cys Pro Phe Thr Leu Asn
 465 470 475 480

Val Gln His Asn Gly Phe Cys Glu Arg Cys His Ala Arg Gln Ile Asn
 485 490 495

Ala Ser His Thr Ala Asp Pro Gly Lys Cys Gln Ala Cys Leu Gln Asp
 500 505 510

Val Thr Arg Thr Phe Asn Gly Ile Cys Ser Thr Cys Phe Lys Arg Thr
 515 520 525

Thr Ala Glu Pro Ser Ser Leu Thr Ser Ser Ile Pro Ala Ser Cys
 530 535 540

His Gln Arg Ser Lys Ser Asp Pro Ser Gln Leu Ile Gln Ser Leu Thr
 545 550 555 560

Pro His Ser Cys His Arg Thr Gly Asn Val Ser Pro Ser Gly Cys Leu
 565 570 575

Ser Gln Ala Ala Arg Thr Pro Gly Asp Arg Ala Gly Thr Ser Lys Cys
 580 585 590

Arg Lys Ala Gly Cys Met Tyr Phe Gly Thr Pro Glu Asn Lys Gly Phe
 595 600 605

Cys Thr Leu Cys Phe Ile Glu Tyr Arg Glu Asn Lys Gln Ser Val Thr
 610 615 620

Ala Ser Ala Lys Ala Gly Ser Pro Ala Pro Arg Phe Gln Asn Asn Val
 625 630 635 640

Pro Cys Leu Gly Arg Glu Cys Gly Thr Leu Gly Ser Thr Met Phe Glu
 645 650 655

Gly Tyr Cys Gln Lys Cys Phe Ile Glu Ala Gln Asn Gln Arg Phe His
 660 665 670

Glu Ala Arg Arg Thr Glu Glu Gln Leu Arg Ser Ser Gln His Arg Asp
 675 680 685

Met Pro Arg Thr Thr Gln Val Ala Ser Arg Leu Lys Cys Ala Arg Ala
 690 695 700

Ser Cys Lys Asn Ile Leu Ala Cys Arg Ser Glu Glu Leu Cys Met Glu
 705 710 715 720

Cys Gln His Leu Ser Gln Arg Val Gly Ser Val Ala His Arg Gly Glu
 725 730 735

Pro Thr Pro Glu Glu Pro Pro Lys Gln Arg Cys Arg Ala Pro Ala Cys
 740 745 750

Asp His Phe Gly Asn Ala Lys Cys Asn Gly Tyr Cys Asn Glu Cys Tyr
 755 760 765

Gln Phe Lys Gln Met Tyr Gly
 770 775

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 ttacaaatat taataaatca atattcacat gacagcaaaa gtggcaatga ttctacaaga 180
 aggtgaggag gaagatgctt tccggccgc agcaatgtct ctggagaggc ctccctgtccc 240
 ttcttctcc ttcaatgagg tgtgctccta ttttaagaaa acctgataca agcagatcta 300
 atcagtttag gaagctggta tttatggca ccgcaaaaata attttttac aaaaaaaaaatt 360
 ctatcaagga tcctttaaat atcaagtttc ccaatgcact tagaatacag ttaaccaaatt 420
 ttacaagtct tcgacttctc tctggtgtag ctctaccgca nggcgtgagg tattgctgaa 480
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21

<210> 51
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 <213> Artificial Sequence

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<400> 51
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25

<210> 52
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<213> Artificial Sequence

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<400> 52
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<210> 53
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<400> 53
gggaggacct tacctgttgc t 21

<210> 54
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19

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29

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21

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21

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<210> 61
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<210> 62
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<400> 63
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<210> 65
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23

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20

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20

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27

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<400> 69
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22

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23

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<400> 75
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22

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<400> 76
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24

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<400> 77
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19

<210> 78
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<400> 78
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<210> 79
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<400> 80
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<210> 82
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<400> 82
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<210> 84
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<400> 84
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<210> 86
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<210> 92
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<400> 92
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18

<210> 93
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<212> DNA
<213> Artificial Sequence

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<400> 93
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28

<210> 94
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 94
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25